

## REMARKS

In the Office Action of February 22, 2007, the Examiner rejected all pending claims of the present application (claims 53-66) under 35 U.S.C. §§ 102 or 103. The sole reference relied on by the Examiner was U.S. Patent No. 5,854,708 to Komatsu et al. (“Komatsu”).

### **A. Status Of The Claims**

Independent claim 53 and dependent claims 56-58 and 66 have been amended.

Dependent claims 54-55 and 59-65 have not been amended. Claims 1-52 were cancelled in a preliminary amendment.

The amendment to independent claim 53 addresses the Examiner’s concern that the claims do not specify that the surface layer is a three-component layer. The Applicant had contended that Komatsu does not disclose such a three-component structure formed on a substrate. The Examiner responded that the claims do not require a three-component structure. While the Applicant had understood the claims to require such a structure, the amendment to claim 53 clarifies this point.

The amendments to independent claim 53 and dependent claims 56-58 and 66 also address the Examiner’s concern that the claims do not specify that the various components in the surface layer are all on the same side of the substrate. The Applicant had contended that the added limitations of claims 56-58 and 66 were not met by Komatsu because the elements in Komatsu alleged to meet these limitations are on the rear surface of the substrate, not on the same side as the surface layer. Due to the amendments to independent claim 53 and dependent claims 56-58 and 66, it is now more clear that the components recited in those claims must all be on the same side of the substrate, not on different sides.

**B. Komatsu Does Not Anticipate, Or Render Obvious, Any Claim In the Present Application**

The claimed invention is directed to a method for cleaning air. The method involves the use of a composite comprising a substrate and a surface layer. The surface layer is hydrophilic and self-cleanable, and comprises three components. The three required components are: (1) a photocatalyst, (2) a component comprising a first metal oxide selected from a first Markush group, and (3) a component comprising a second metal oxide selected from a second Markush group.

Komatsu discloses an anti-fog element on a substrate. (Komatsu at col. 2, ll. 8-13.) The anti-fog element is comprised of two films: a photocatalyzer film, and an inorganic oxide film on the photocatalyzer film. (*Id.*) An example of a material for the photocatalyzer film is  $TiO_2$ . (*Id.* at col. 2, ll. 40-44.) An example of a material for the inorganic oxide film is  $SiO_2$ . (*Id.* at col. 2, ll. 33-39.) Another example of a material for the inorganic oxide film is  $Al_2O_3$ . (*Id.*) Komatsu does *not* disclose using a mixture of  $SiO_2$  and  $Al_2O_3$ , nor does it disclose using any mixture of inorganic oxides for the inorganic oxide film. Likewise, Komatsu does not disclose any applicable three-component structure formed on a substrate, or any applicable triple-layer structure on a substrate for the anti-fog element. As such, it cannot form the basis for a rejection of claims 53 *et seq.* under § 102. *See, e.g., Rapoport v. Dement*, 254 F.3d 1053, 1057 (Fed. Cir. 2001); *Gechter v. Davidson*, 116 F.3d 1454, 1457 (Fed. Cir. 1997); MPEP § 2131.

Not only does Komatsu fail to disclose or suggest using a third component metal oxide in its anti-fogging element, it also fails to disclose any explicit or implicit motivation to use such a third component metal oxide. This lack of an explicit or implicit motivation to modify Komatsu is fatal to any obviousness rejection of claims based on Komatsu. *See, e.g., Ecolochem v.*

*Southern California Edison Co.*, 227 F.3d 1361, 1372 (Fed. Cir. 2000); *In re Vaeck*, 947 F.2d 488, 493-95 (Fed. Cir. 1991); MPEP § 2142.

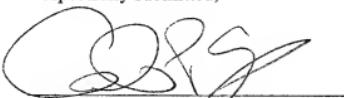
Additionally, in some of the examples, Komatsu discloses metals such as Cr or Al on the *rear* surface of the glass substrate. (See, e.g., Example 2.) These materials are not part of the photocatalytic layer – they are on the *opposite* side of the substrate from the photocatalytic layer. (*Id.*) Accordingly, the Applicant respectfully submits that the Examiner's rejections of claims 56-58 and 66 should be withdrawn, since these claims all clarify that the recited components are in the surface layer that is on one side of the substrate, rather than having some components on one side, and other of the components on the other side.

The Applicant believes that other limitations in the claims are not met by Komatsu, but they need not be argued in view of the foregoing deficiencies in Komatsu. The Applicant respectfully submits that the Examiner's rejections under 35 U.S.C. §§ 102 and 103 should be withdrawn.

#### CONCLUSION

For all of the foregoing reasons, the Applicant respectfully requests that the pending claims be allowed.

Respectfully submitted,



Calvin P. Griffith  
Registration No. 34,831  
JONES DAY  
North Point  
901 Lakeside Avenue  
Cleveland, OH 44114  
(216) 586-7050

Attorney for Toto Ltd.

Date: April 23, 2007